UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
TOPGYAL, GELEK W

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/667,079	TSENG ET AL.
	Examiner	Art Unit	
	Gelek Topgyal	2621	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 November 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7,9,10,12-18,20,26-28 and 30-35</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7,9,10,12-18,20,26-28 and 30-35</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>18 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 11/21/2007 have been fully considered but they are not persuasive.

2.   In re pages 12-14, the applicants argue with respect to claim 1 that '296 patent (Nonweiler) does not disclose the feature of "decomposing the high-resolution image into a plurality of primary images data of standard image resolution" and furthermore argue that the '296 does not teach the high resolution image, the standard image resolution, and the disc playable image data.

3.   In response, the examiner respectfully disagrees. The claim merely states "decomposing the high resolution image into a plurality of primary images data of standard image resolution". The system of Nonweiler teaches a first high resolution image as seen in Figure 2, which is divided (meeting claimed "decomposed") into smaller resolution versions of the high resolution image, as can be seen in Figure 4. The limitations in claim 1 does not divulge any more information as to how the high resolution image is "decomposed", therefore as broadly interpreted, the system of Nonweiler does in fact the claimed "decomposing the high resolution image into a plurality of primary images data of standard image resolution".

       In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "interleaved fields, odd and even numbered lines" and "DVD field") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4.   Furthermore, it is argued that the '296 patent is used solely in TV technology and

not in the DVD field (and not obvious), and the applicants argue that the present

invention is not divided into odd or even numbered lines, but rather is decomposed into

different image resolutions.

5.   As discussed in paragraph 3 above, independent claim 1 does not recite any of

the following features: "DVD field", "interleaved fields", "odd and even numbered lines".

6.   In re page 14, the applicants argue with respect to claim 1 that the '477 patent

(Watkins) does not teach or suggest storing the image data in the video-audio data

format and the user data format of the exited image medium, and that there's no

teaching of "decomposing" in the '477 patent.

7.   In response to applicant's arguments against the references individually, one

cannot show nonobviousness by attacking references individually where the rejections

are based on combinations of references. The reference of Nonweiler specifically

teaches the ability to record the plurality of primary images in separate areas. The

system of Watkins was relied to teach wherein the different VOBs of the DVD format

representing multiple viewing angle storage areas can record a plurality of different

picture information. Furthermore, the step of "decomposing" is already relied on

Nonweiler as clearly recited in page 2 of the last Office Action, not Watkins. See *In re

Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091,

231 USPQ 375 (Fed. Cir. 1986).

8.   Furthermore, it is argued that the characteristic and the achieved effect are

different from that of the embodiments of the present application.

9.   In response, the examiner respectfully disagrees. Although the claims are

interpreted in light of the specification, all the limitations as recited in claim 1 is clearly

met by the proposed combination of Nonweiler and Watkins, and therefore, the

characteristic and the achieved effect is the same as that of the present application. The

proposed combination allows for the plurality of primary image data to be stored into the

plurality of angle storage areas (VOBs) so that during reproduction, the proposed

system of Nonweiler and Watkins allows for the plurality of primary image data to be

reproduced from the plurality of angle storages areas (VOBs) of Watkins to allow for

reassembling and presentation of the high resolution image. Furthermore, col. 6, lines

44-47 clearly states "each set of data therefore is a lower resolution version of the data

in the framestore 15".

10.   In re pages 15-16, the applicants argue that the newly added limitations to claims

12, 26 and 31 are not met by the combination of the '296, the '477, and the '804 patent

(Crinon et al).

11.   As discussed in the prior art rejection below, the newly added limitations are met

by the proposed combination of Nonweiler, Watkins and Crinon et al.

12.   In re pages 17-18, the applicants argue that the combination of the '296 patent

and the '477 patent is incomplete and improper because it fails to at least (1) ascertain

the differences between the prior art and the claims in issue; and (2) resolve the level of

ordinary skill in the art. Furthermore, it is argued that the proposed combination

embodies clear and improper hindsight rationale.

13.   In response, the examiner respectfully disagrees. For the 103 rejection of

independent claim 1, the teachings of Nonweiler and Watkins are relied upon. In the first

part of the rejection, it states that Nonweiler teaches the limitation of b) decomposing

the high-resolution image into a plurality of primary images data of standard image

resolution (Figures 2-4 and col. 7, lines 28-59 teaches wherein a high resolution image

is decomposed into a plurality of smaller resolution images); the short comings of

Nonweiler are stated and further relied to be taught by Watkins. Watkins teaches the

limitations of a) defining a video-audio data format and a plurality of user data formats

on the image data carrier; and c) storing one set of the primary image data into the

video-audio data format of the image data carrier and storing another primary image

data set into the plural of user data formats (as relied upon col. 5, lines 19-42 and Fig.

3, 82). The differences between the prior art and the claims in issue have been clearly

presented as all the limitations of claim 1 is met.

    Furthermore, it was further discussed that Nonweiler teaches in col. 9, lines 30-

33 and col. 6, lines 49-52 that the storing of the plurality of the smaller resolution images

are likened to that of a "multiplexer or a commutator". Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to

incorporate the ability to record the plurality of images of Nonweiler into the separate

VOBs as taught in Watkins in order to improve organization of the media stored on a

particular medium. The combination of Nonweiler and Watkins meets the claimed

limitation and therefore it is obvious to someone of ordinary skill in the art at the time of

the invention.

Furthermore, in response to applicant's argument that the examiner's conclusion

of obviousness is based upon improper hindsight reasoning, it must be recognized that

any judgment on obviousness is in a sense necessarily a reconstruction based upon

hindsight reasoning. But so long as it takes into account only knowledge which was

within the level of ordinary skill at the time the claimed invention was made, and does

not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA

1971).

Claim Rejections - 35 USC § 103

14.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

15.   **Claims 1-2, 5-7 and 9-10** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US 6,728,477).

Regarding claim 1, Nonweiler teaches method for enhancing the image

resolution, wherein the method is applied to <u>a high-resolution</u> image data carrier for

storing or playing a high-resolution image at least twice the standard image resolution,

the method comprising the following steps:

b. decomposing the high-resolution image into a plurality of primary images data

of standard image resolution (Figures 2-4 and col. 7, lines 28-59 teaches wherein a high

resolution image is decomposed into a plurality of smaller resolution images); and

e. combining and restoring primary image data from the user data formats into

the high-resolution image and playable by a specific playback apparatus; wherein the

specific playback apparatus comprises: a readout unit to read out the plural user data

formats on the high-resolution image data carrier (col. 6, lines 15-17 teaches wherein

"the reverse procedure is employed when data is transferred from the disk stores to the

manipulation framestore 15". Fig. 1, processor 16 is used to control the reading/writing

functions of the system); and

an image-combining unit to acquire the primary image data at a same position of

the user data format to combine and restore the high-resolution image (col. 6, lines 15-

17 teaches wherein "the reverse procedure is employed when data is transferred from

the disk stores to the manipulation framestore 15", therefore, the plurality of smaller

resolution images are put together at the same position as they were when originally

divided to regenerate the high-resolution image).

However, Nonweiler does not particularly teach the following:

a. defining a video-audio data format and a plurality of user data formats on the

high-resolution image data carrier;

c. encoding primary image data to form a disc playable image data;

d. storing one set of the primary image data into the video-audio data format of the image data carrier and storing another primary image data set into the plural of user data formats.

In an analogous art, Watkins teaches in col. 5, lines 19-42 wherein multiple viewing angles of a particular shot can be recorded into separate VOB units (Fig. 3, 82) on a particular medium (meeting the claimed "high-resolution image data carrier"). This ability to store multiple viewing angles in the separate VOB units meets the claimed limitation of (d) above. The medium's format, including the ability to define VOB units for a particular medium meets the claimed video-audio data format and the user data format of the image data carrier (limitation (a) above). Furthermore, Watkins teaches in col. 1, lines 46-57 and col. 5, lines 18-53 of typical authoring tools for creating a DVD, which includes an encoder to encode video so that it can be played back.

Nonweiler teaches in col. 9, lines 30-33 and col. 6, lines 49-52 that the storing of the plurality of the smaller resolution images are likened to that of a "multiplexer or a commutator". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ability to "decompose" a high resolution image into a plurality of standard resolution images and further record/reproduce the plurality of images of Nonweiler into the separate VOBs (multiple viewing angle storage areas) by encoding as taught in Watkins in order to improve organization of the media stored on a particular medium.

Regarding claim 2, the proposed combination of Nonweiler and Watkins

teaches the limitations as discussed in claim 1 above, and furthermore, Watkins

teaches wherein the image data carrier is a DVD medium (Fig. 2, DVD disk 66).

Regarding claim 5, the proposed combination of Nonweiler and Watkins

teaches the limitations as discussed in claim 1 above, and furthermore, the VOBs of

Watkins (Fig. 3, 82) each stores a particular camera angle (VOB-Angle 1, VOB-Angle 2,

etc).

Regarding claim 6, the proposed combination of Nonweiler and Watkins

teaches the limitations as discussed in claim 1 above, and furthermore, the video

recorded in the disc of Watkins is that of a DVD format. Therefore, it is inherent that the

recorded video is recorded in the format of MPEG. Furthermore, VCD and SVCD record

video in the format of MPEG as well.

Regarding claim 7, the proposed combination of Nonweiler and Watkins

teaches the limitations as recited in claim 1 above, and furthermore, Nonweiler teaches

the claimed wherein the manner of decomposing high-resolution image in step (b) is:

evenly decomposing and distributing the plural image pixels of the high-

resolution image, adjacent along a vertical direction or a horizontal screen (Figures 3

and 4) on a screen, into corresponding plural pixels of primary image data, wherein the

corresponding plural pixels are located at a same pixel position (Figures 3 and 4, and

col. 7, lines 28-59 teaches the claimed. Each of the plurality of images stores pixels at

the same location corresponding to the high resolution image).

Claims 9 and 10 are rejected for the same reasons as discussed in claim 6

above.

16.   **Claims 12-13, 16-18, 20, 26, 28, 30-31 and 33-35** are rejected under 35 U.S.C.

103(a) as being unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US

6,728,477) and further in view of Crinon et al. (US 6,285,804).

Regarding claims 12, Nonweiler teaches a method for enhancing the image

resolution, wherein the method is applied to <u>a high-resolution</u> image data carrier for

storing or playing a high-resolution image that is at least twice the standard image

resolution, the method comprising the following steps:

b. decomposing the high-resolution image into plural primary image data of

standard image resolution (Figures 2-4 and col. 7, lines 28-59 teaches wherein a high

resolution image is decomposed into a plurality of smaller resolution images); and

<u>combining and restoring secondary image data from the video-audio data</u>

<u>formats into the high-resolution image and playable by a specific playback apparatus;</u>

<u>wherein the specific playback apparatus comprises: a readout unit to read out the plural</u>

<u>user data formats on the high-resolution image data carrier</u> (col. 6, lines 15-17 teaches

wherein "the reverse procedure is employed when data is transferred from the disk

stores to the manipulation framestore 15". Fig. 1, processor 16 is used to control the

reading/writing functions of the system<u>; and an image-combining unit to acquire the</u>

<u>primary image data at a same position of the user data format to combine and restore</u>

<u>the high-resolution image</u> (col. 6, lines 15-17 teaches wherein "the reverse procedure is

employed when data is transferred from the disk stores to the manipulation framestore

15", therefore, the plurality of smaller resolution images are put together at the same

position as they were when originally divided to regenerate the high-resolution image).

However, Nonweiler does not particularly teach the following:

a. setting the <u>high-resolution</u> image data carrier to have a video-audio data

format and plural user data format;

c. storing the plural primary image data into the user data format;

<u>e. encoding the secondary image data to form a disc playable image data</u>;

f. storing the secondary image data into the video-audio data format of the <u>high-</u>

<u>resolution</u> image data carrier;

In an analogous art, Watkins teaches in col. 5, lines 19-42 wherein multiple

viewing angles of a particular shot can be recorded into separate VOB units (Fig. 3, 82)

on a particular medium (meeting the claimed "high-resolution image data carrier"). This

ability to store multiple viewing angles in the separate VOB units meets the claimed

limitation of (c) and (f) above. The medium's format, including the ability to define VOB

units for a particular medium meets the claimed video-audio data format and the user

data format of the image data carrier (limitation (a) above). Furthermore, Watkins

teaches in col. 1, lines 46-57 and col. 5, lines 18-53 of typical authoring tools for

creating a DVD, which includes an encoder to encode video so that it can be played

back.

Nonweiler teaches in col. 9, lines 30-33 and col. 6, lines 49-52 that the storing of

the plurality of the smaller resolution images are likened to that of a "multiplexer or a

commutator". Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to incorporate the ability to "decompose" a high

resolution image into a plurality of standard resolution images and further

record/reproduce the plurality of images of Nonweiler into the separate VOBs (multiple

viewing angle storage areas) by encoding as taught in Watkins in order to improve

organization of the media stored on a particular medium.

The proposed combination of Nonweiler and Watkins fails to teach the following:

d. calculating an average of the pixels at the same positions in the plural primary

image data for forming a secondary image data; and

In an analogous art, Crinon et al. teaches in Figure 7 and in col. 5, lines 28-59

teaches spatial interpolation wherein "the four nearest pixel values" of each of the

plurality of smaller resolution images 16 are used to create a high resolution image 19.

The four nearest pixels values can be an average value.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the ability to create an averaged image by utilizing

the average value of "the four nearest pixel values" of each image 16 as taught in

Crinon et al. so that it can be stored into another VOB-Angle-n storage area as taught

by the proposed combination of Nonweiler and Watkins to allow for the user with the

option to view different types of video on the stored on the medium.

Claim 13 is rejected for the same reasons as discussed in claim 2 above.

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Claims 16-18 and ~~20-21~~ are rejected for the same reasons as discussed above
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in claims 5-7 and 9-10, respectively.

Apparatus claim 26 is rejected for the same reasons as discussed in the

method claim 12 above.

Apparatus claim 28 is rejected for the same reasons as discussed in claim 5

above.

Apparatus claim 30 is rejected for the same reasons as discussed in claims 9

and 10 above.

Playback apparatus claims 31, 33-35 are rejected for the same reasons as

discussed above in encoding apparatus claims 26, 28 and 30, and furthermore Watkins

teaches in Fig. 4, of a decoder 112 to decode the images for display. The apparatus for

encoding as recited in claims 26-30 is capable of reproducing the video stored on the

medium for display.

17.   **Claims 3-4, 14-15, 27 and 32** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Nonweiler (US 5,483,296) in view of Watkins (US 6,728,477) and

further in view of De Bruijne (US 6,944,392).

Regarding claims 3 and 4, the proposed combination of Nonweiler and Watkins

teaches the claimed as discussed in claim 1 above, however, fails to teach wherein the

image data carrier is a VCD or a SVCD medium.

In analogous art, De Bruijne teaches in col. 2, lines 15-23 of the ability to store

video into any type of medium, including VCD or a SVCD.

Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to incorporate the ability to record the plurality of video of

the proposed combination of Nonweiler and Watkins into VCDs or SVCDs as taught

by De Bruijne to increase the distribution ability by matching the formats of different

types of players.

Claims 14 and 15 are rejected for the same reasons as discussed above in

claims 3 and 4, respectively.

Apparatus claim 27 is rejected for the same reasons as discussed in claims 2-4

above.

Claim 32 is rejected for the same reasons as discussed in claims 2-4 above.

Conclusion

18.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

19.   Hughes, Jr. et al. teaches a similar prior art that allows for a high definition video

to be broken up into a base layer and an enhancement layer to allow for standard and

high-definition to be played back by compatible devices.

20.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

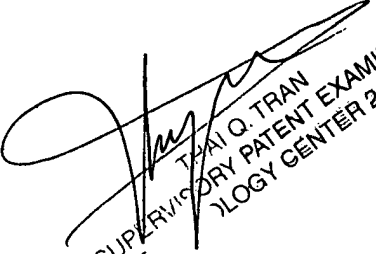mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Gelek Topgyal whose telephone number is 571-272-

8891. The examiner can normally be reached on 8:30am -5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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GT
1/31/2008